

**Work Breakdown Structure**

**Work Breakdown Structure (WBS)  
And Dictionaries**

## Work Breakdown Structure Summary

Available Dictionary	Indenture Level						Title	WBS	SOW Reference
	1	2	3	4	5	6			
	x						<b>DUF6 Conversion Operations</b>	1	
X		x					<b>Paducah Plant</b>	1.01	
X			x				Conversion Operations Management	1.01.01	C.3, C.4
X					x		Start-Up	1.01.01.01	C.3
X						x	Plans & Procedures	1.01.01.01.01	C.3
X						x	Operations Transition	1.01.01.01.02	C.3
X						x	Readiness Assessment	1.01.01.01.03	C.3
X						x	Option 2 for Hot Functional Testing	1.01.01.01.04	C.3
X					x		Conversion Operations	1.01.01.02	C.4
X						x	Control & General Operations	1.01.01.02.01	C.4
X						x	Cylinder & DUF6 Handling (front end)	1.01.01.02.02	C.4, C.4.5
X						x	Cylinder & Oxide Handling & Modification (back end)	1.01.01.02.03	C.4, C.4.6
X						x	HF Scrubbing, KOH Regeneration & DIW	1.01.01.02.04	C.4, C.4.6
X						x	N2 Lease	1.01.01.02.05	C.4
X					x		Maintenance	1.01.01.03	C.4
						x	Systems	1.01.01.03.01	C.4
						x	Buildings, Yards, Structures	1.01.01.03.02	C.4
						x	Roads & Railroads	1.01.01.03.03	C.4
						x	Vehicles	1.01.01.03.04	C.4
X					x		Utilities	1.01.01.04	C.4
X						x	Water	1.01.01.04.01	C.4
X						x	Sewer	1.01.01.04.02	C.4
X						x	Natural Gas	1.01.01.04.03	C.4
X						x	Electric	1.01.01.04.04	C.4
X						x	Other Utilities	1.01.01.04.05	C.4
			x				Cylinder, Product & Waste Management	1.01.02	C.4, C.5.5, C.5.6, C.6
X					x		Cylinder Management & Support	1.01.02.01	C.4, C.6, C.6.1, C.6.2
X						x	Cylinder Yard	1.01.02.01.01	C.4, C.6.2
X						x	Cylinder Material & Disposition Support	1.01.02.01.02	C.4, C.5.5, C.6.2
					x		Waste Management & Transport	1.01.02.02	C.4, C.5.6
X						x	Waste Transportation	1.01.02.02.01	C.4, C.5.6
X						x	Waste Disposal	1.01.02.02.02	C.4, C.5.6
X						x	Waste Sampling & Characterization	1.01.02.02.03	C.4, C.5.6
X						x	Secondary Waste	1.01.02.02.04	C.4, C.5.6
					x		Product Sales	1.01.02.03	C.5.5
X						X	AqHF Sales	1.01.02.03.01	C.5.5
X						X	Other Product Sales	1.01.02.03.02	C.5.5
			x				Site Support	1.01.03	C.5
X					x		Site ES&H	1.01.03.01	C.5.7, C.5.8
X					x		Safeguards, Security & Emergency Preparedness	1.01.03.02	C.5.9, C.5.10, C.5.11
X					x		Compliance	1.01.03.03	C.5.2, C.5.3

**Work Breakdown Structure**

X				x	Quality Assurance & Quality Control	1.01.03.04	C.5.4
X				x	Plant Engineering	1.01.03.05	C.4.12, C.4.13
X				x	Business Systems	1.01.03.06	C.5, C.5.12
X				x	Human Resources/ Industrial Relations	1.01.03.07	C.5
X				x	Training	1.01.03.08	C.5
X				x	Information Technology	1.01.03.09	C.5
X			x		Plant Management	1.01.04	C.3, C.4, C.5, C.6
X				x	Plant Manager	1.01.04.01	C.3, C.4, C.5, C.6
X				x	Conversion Operations Manager	1.01.04.02	C.3, C.4
X				x	Logistics Manager	1.01.04.03	C.3, C.4, C.5, C.6
X		x			<b>Portsmouth Plant</b>	1.02	
X			x		Conversion Operations Management	1.02.01	C.3, C.4
X				x	Start-Up	1.02.01.01	C.3
X				x	Plans & Procedures	1.02.01.01.01	C.3
X				x	Operations Transition	1.02.01.01.02	C.3
X				x	Readiness Assessment	1.02.01.01.03	C.3
X				x	Option 1 for Hot Functional Testing	1.02.01.01.04	C.3
X				x	Conversion Operations	1.02.01.02	C.4
X				x	Control & General Operations	1.02.01.02.01	C.4
X				x	Cylinder & DUF6 Handling (front end)	1.02.01.02.02	C.4, C.4.5
X				x	Cylinder & Oxide Handling & Modification (back end)	1.02.01.02.03	C.4, C.4.6
X				x	HF Scrubbing, KOH Regeneration & DIW	1.02.01.02.04	C.4, C.4.6
X				x	N2 Lease	1.02.01.02.05	C.4
X				x	Maintenance	1.02.01.03	C.4
				x	Systems	1.02.01.03.01	C.4
				x	Buildings, Yards, Structures	1.02.01.03.02	C.4
				x	Roads & Railroads	1.02.01.03.03	C.4
				x	Vehicles	1.02.01.03.04	C.4
X				x	Utilities	1.02.01.04	C.4
X				x	Water	1.02.01.04.01	C.4
X				x	Sewer	1.02.01.04.02	C.4
X				x	Natural Gas	1.02.01.04.03	C.4
X				x	Electric	1.02.01.04.04	C.4
X				x	Other Utilities	1.02.01.04.05	C.4
			x		Cylinder, Product & Waste Management	1.02.02	C.4, C.5.5, C.5.6, C.6
X				x	Cylinder Management & Support	1.02.02.01	C.4, C.6, C.6.1, C.6.2
X				x	Cylinder Yard	1.02.02.01.01	C.4, C.6.2
X				x	Cylinder Material & Disposition Support	1.02.02.01.02	C.4, C.5.5, C.6.2
				x	Waste Management & Transport	1.02.02.02	C.4, C.5.6
X				x	Waste Transportation	1.02.02.02.01	C.4, C.5.6
X				x	Waste Disposal	1.02.02.02.02	C.4, C.5.6
X				x	Waste Sampling & Characterization	1.02.02.02.03	C.4, C.5.6
X				x	Secondary Waste	1.02.02.02.04	C.4, C.5.6
				x	Product Sales	1.01.02.03	C.5.5
X				x	AqHF Sales	1.01.02.03.01	C.5.5
X				X	Other Product Sales	1.01.02.03.02	C.5.5

**Work Breakdown Structure**

			x			Site Support	1.02.03	C.5
X					x	Site ES&H	1.02.03.01	C.5.7, C.5.8
X					x	Safeguards, Security & Emergency Preparedness	1.02.03.02	C.5.9, C.5.10, C.5.11
X					x	Compliance	1.02.03.03	C.5.2, C.5.3
X					x	Quality Assurance & Quality Control	1.02.03.04	C.5.4
X					x	Plant Engineering	1.02.03.05	C.4.12, C.4.13
X					x	Business Systems	1.02.03.06	C.5, C.5.12
X					x	Human Resources/ Industrial Relations	1.02.03.07	C.5
X					x	Training	1.02.03.08	C.5
X					x	Information Technology	1.02.03.09	C.5
X			x			Plant Management	1.02.04	C.3, C.4, C.5, C.6
X					x	Plant Manager	1.02.04.01	C.3, C.4, C.5, C.6
X					x	Conversion Operations Manager	1.02.04.02	C.3, C.4
X					x	Logistics Manager	1.02.04.03	C.3, C.4, C.5, C.6
		x				<b>Integrated Program Management &amp; Support</b>	1.03	C.5
X			x			Program Management & Administration	1.03.01	C.5
X			x			Operations Management	1.03.02	C.5
X			x			Other Direct Costs	1.03.03	C.5

**Work Breakdown Structure**

**1.0**

**DUF<sub>6</sub> Conversion Operations**

**Work Breakdown Structure**

**1.01**

**Paducah Plant**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/2009
<b>3. WBS Element</b>  1.01	<b>4. WBS Element Title</b>  Paducah Plant	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Integrated safety management</li> <li>○ Safeguards, security and emergency preparedness</li> <li>○ Plant engineering and configuration management</li> <li>○ Safe and compliant operations of conversion facilities and cylinder yards</li> <li>○ Retrieve, transport and process DUF6 cylinders</li> <li>○ Dispose of conversion products, all waste forms, and empty and heel cylinders</li> </ul>		
<p><i>b. Cost Content</i></p> <p>Summary for the Paducah Plant for conversion operations; cylinder, product, and waste management; site support; and Paducah Plant management during Transition, Start-up, and Operations. Lower level WBS elements will contain labor, fringe, material, equipment, travel, and subcontracts associated with all phases of the Paducah Plant DUF6 conversion process covering 5 years.</p>		
<p><i>c. Technical Content</i></p> <p>Lower level WBS levels will provide the detailed technical content associated with the start-up and operation of the Paducah DUF6 Conversion Plant which will convert DOE's inventory of DUF6 currently stored at Paducah. Lower level technical content will also include cylinder, product, and waste management activities and site support activities.</p>		

**Work Breakdown Structure**

**1.01.01**

**Conversion Operations Management**



**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01	<b>4. WBS Element Title</b>  Conversion Operations (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Prepare/maintain operations and maintenance plans and procedures</li> <li>○ Process DUF6 cylinders</li> <li>○ Modify cylinders and fill with oxide</li> <li>○ Condense and transfer HF</li> <li>○ Operate and maintain conversion and regeneration facilities</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element summarizes costs associated with WBS elements for Start-Up, Conversion Operations, Maintenance, and Utilities associated with operations at the DUF6 Conversion Plant and will include labor, fringe, material, equipment, subcontracts, and travel.</p>		
<p><i>c. Technical Content</i></p> <p>Lower level WBS elements will provide the detailed technical content for start-up, conversion operations, maintenance, and utilities associated with conversion of DUF6. The technical content shall include preparation/modification of plans and procedures for start-up and operations and maintenance, process materials, processing steps, production, contractual requirements for operation, and maintenance of site facilities.</p>		

**Work Breakdown Structure**

**1.01.01.01**

**Start-Up**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.01	<b>4. WBS Element Title</b>  Start-Up (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Provide and implement design changes as required</li> <li>○ Prepare/modify O&amp;M procedures as required</li> <li>○ Complete ORR and RA requirements</li> <li>○ Execute Start-Up Plan</li> <li>○ Conduct partial conversion operations as described in WBS 1.01.01.02</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element which covers Transition and Start-Up of DUF6 conversion operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Nuclear Safety support</li> <li>○ Start-up testing support</li> <li>○ Preparation/modification of operations plans and procedures</li> <li>○ ORR closeout</li> <li>○ Readiness Assessment</li> <li>○ Conversion system modifications during transition and start-up</li> <li>○ Equipment and materials during transition and start-up of conversion operations</li> </ul>		
<p><i>c. Technical Content</i></p> <p>This and lower level WBS elements provide detailed technical content for:</p> <ul style="list-style-type: none"> <li>○ Modifications to operations plans, procedures, and related training.</li> <li>○ First-use of hazardous materials</li> <li>○ Hot functional testing</li> <li>○ Operations evolutions and evaluations for each line, as required, to reach full plant capacity</li> </ul>		

**Work Breakdown Structure**

**1.01.01.01.01**

**Plans & Procedures**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09	
<b>3. WBS Element</b>  1.01.01.01.01	<b>4. WBS Element Title</b>  Plans & Procedures (Paducah)		
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>	
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>		
<b>10. Element Task Description</b>			
<p><i>a. Work Statement</i> At the start of the contract (post-ORR) detailed planning for hot start-up will commence. During start-up evolutions experience gained and lessons learned will result in the modification of many operational plans and procedures.</p>			
<p><i>b. Cost Content</i> Cost elements for this WBS include the following subcontracted activities:</p> <ul style="list-style-type: none"> <li>○ Nuclear Safety support</li> <li>○ Plans and procedures</li> </ul>			
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Nuclear Safety planning support for hot startup activities post-ORR during the 3-month Transition period.</li> <li>○ Modifications of plans and procedures based on start-up experience and lessons learned.</li> </ul>			

**Work Breakdown Structure**

**1.01.01.01.02**

**Operations Transition/ORR Closeout**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.01.02	<b>4. WBS Element Title</b>  Operations Transition (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> Transition of conversion operations planning from the existing contractor to the new contractor will occur. This includes the orderly transfer of resource planning, accountability and training. It also requires assurances that any remaining ORR findings are effectively addressed.		
<i>b. Cost Content</i> Cost elements for this WBS include labor and fringe benefits for one complete daytime shift during the 3-month Transition period. Subcontract costs related to training and ORR closeouts are also included.		
<i>c. Technical Content</i> One complete daytime shift will address preparations for start-up of conversion operations. Any additional training for operations will occur.		

**Work Breakdown Structure**

**1.01.01.01.03**

**Readiness Assessment**



**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.01.03	<b>4. WBS Element Title</b>  Readiness Assessment (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Review the Operational Readiness Review preparation and results</li> <li>○ Prepare/modify facility O&amp;M procedures as required</li> <li>○ Modify staffing arrangements as needed</li> <li>○ Execute a Readiness Assessment satisfactory to the DOE</li> <li>○ Obtain DOE readiness to proceed notification</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element which covers Readiness Assessment by the DUF6 Operating Contractor</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Nuclear Safety support</li> <li>○ Preparation/modification of operations plans and procedures</li> <li>○ Readiness Assessment</li> <li>○ Conversion system modifications needed for full operations</li> <li>○ Equipment and materials during transition of conversion operations contractors</li> </ul>		
<p><i>c. Technical Content</i></p> <p>This WBS element provides detailed technical content for:</p> <ul style="list-style-type: none"> <li>○ Modifications to operations plans, procedures, and related training.</li> <li>○ Readiness assessment</li> <li>○ Operations evaluations for each line, as required, to permit full plant operation.</li> </ul>		

**Work Breakdown Structure**

**1.01.01.01.04**

**Option 2 for Hot Functional Testing**

## Work Breakdown Structure

### WORK BREAKDOWN STRUCTURE DICTIONARY ELEMENT DEFINITION

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.01.04	<b>4. WBS Element Title</b>  Option 2 for Hot Functional Testing (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <p>Safe and compliant operations of conversion facilities from Startup Authorization through demonstration of full production capacity of the facility. All functions of the facility will be involved including:</p> <ul style="list-style-type: none"> <li>○ Integrated safety management</li> <li>○ Safeguards, security and emergency preparedness</li> <li>○ Plant engineering and configuration management</li> <li>○ Retrieve, transport and process DUF6 cylinders</li> <li>○ Preparation for shipment/shipment of conversion products, all waste forms, and empty and heel cylinders</li> <li>○ Necessary support operations</li> </ul> <p>The end point of the hot functional testing phase is when Management has agreed that the process equipment is operating as designed, operations and support personnel have demonstrated proficiency, and that the operating procedures can be satisfactorily performed. Closeout of the hot functional test phase will occur after documented completion of first use controls for the DUF<sub>6</sub> processes. Notification of closeout of the startup plan will be made by the contractor to the DOE Federal Project Director. This will constitute the transition to full normal operations for the processes.</p>		
<p><i>b. Cost Content</i></p> <p>This WBS element summarizes cost associated with activities from Startup Authorization through demonstration of full production capacity, including Startup testing, operations, maintenance and utilities. This WBS element will contain labor, fringe, material, equipment, travel, and subcontracts associated with this phase of plant operation.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for start-up, conversion operations, maintenance, and utilities associated with hot functional testing of the facility. The technical content shall include performance/modification of plans and procedures for start-up and operations and maintenance, process materials, processing steps, production, contractual requirements for operation, including N2.</p>		

**Work Breakdown Structure**

**Work Breakdown Structure**

**1.01.01.02**

**Conversion Operations**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.02	<b>4. WBS Element Title</b>  Conversion Operations (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Move cylinders from FCS into the Conversion Building</li> <li>○ Load cylinders into autoclaves/appropriate vaporization system</li> <li>○ Vaporize DUF6 and transfer to converters</li> <li>○ Stabilize cylinder heels</li> <li>○ Modify cylinders</li> <li>○ Load cylinders with uranium oxide</li> <li>○ Condense HF and place in receiver tanks</li> <li>○ Transfer HF to outside Storage Tanks</li> <li>○ Use and regenerate KOH</li> <li>○ Generate deionized water</li> <li>○ Develop and maintain operating procedures</li> <li>○ Staff and operate 24 hour/7 day per week operation</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element which covers DUF6 conversion operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Equipment</li> <li>○ Material &amp; spare parts</li> <li>○ Subcontracts</li> <li>○ Lease costs for N2 system</li> </ul>		
<p><i>c. Technical Content</i></p> <p>This and lower level WBS elements provide detailed technical content for the operations phase of the DUF6 Conversion Plant. Cylinders containing DUF6 are moved from the FCS and loaded into autoclaves, heated, and DUF6 vapor is fed to conversion units. Oxide powder product is collected in hoppers, sampled and transferred to empty, modified cylinders for shipment off-site. HF vapor is condensed and transferred to HF holding tanks for shipment off-site. Residual off-gas HF is trapped using KOH. KOH will be regenerated using lime and producing CaF2 as a by-product. KOH will also be used in stabilizing the heels in the empty cylinders. Deionized water is generated and wastewater is treated.</p>		

**Work Breakdown Structure**

**1.01.01.02.01**

**Control & General Operations**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.02.01	<b>4. WBS Element Title</b>  Control & General Operations (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Supervision of conversion operations 24 hour/7 day per week</li> <li>○ Develop and maintain operating procedures</li> <li>○ Perform all tasks controlled from the ICS</li> <li>○ Monitor/control HF and oxide transfers</li> <li>○ Coordinate TSR surveillances</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element will contain labor, fringe, material, equipment/spare parts, travel, and subcontracts associated with conversion plant operations.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for conversion operations and shall include performance/modification of plans and procedures for process materials, processing steps, production, and related contractual requirements for operation.</p>		



**Work Breakdown Structure**

**1.01.01.02.02**

**Cylinder & DUF<sub>6</sub> Handling (front end)**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.02.02	<b>4. WBS Element Title</b>  Cylinder & DUF6 Handling – front end (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"><li>○ Cylinder movement from Full Cylinder Storage pad into Conversion Building.</li><li>○ Load cylinders into autoclaves or CER</li><li>○ Vaporize DUF6 and transfer to converters</li><li>○ Move empty cylinders to stabilization area</li><li>○ Stabilize cylinder heels</li><li>○ Necessary support operations</li></ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element will contain labor, fringe, and cylinder related material/spare parts associated with vaporization operations.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for the front end operations conducted in the Conversion Building.</p>		

**Work Breakdown Structure**

**1.01.01.02.03**

**Cylinder & Oxide Handling & Modification  
(back end)**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.02.03	<b>4. WBS Element Title</b>  Cylinder & Oxide Handling & Modification – back end (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Modify cylinders for oxide loading</li> <li>○ Perform oxide powder handling operations</li> <li>○ Load cylinders with oxide</li> <li>○ Move loaded cylinders to staging area</li> <li>○ Operate waste evaporators</li> <li>○ Necessary support operations</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element will contain labor and fringe, plus material/equipment/spare parts associated with hot shop operations involving modifying cylinders with flanges.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for the back end of conversion operations conducted in the Conversion Building.</p>		

**Work Breakdown Structure**

**1.01.01.02.04**

**HF Scrubbing, KOH Regeneration & DIW**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.01.02.04	<b>4. WBS Element Title</b>  HF Scrubbing, KOH Regeneration & DIW (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> <ul style="list-style-type: none"><li>○ Condense HF and place in receiver tanks</li><li>○ Transfer HF to outside Storage Tanks</li><li>○ Use and regeneration of KOH</li><li>○ Generate deionized water</li><li>○ Operation of ETS</li><li>○ Necessary support operations</li></ul>		
<i>b. Cost Content</i> <p>This WBS element will contain labor and fringe plus material/equipment/spare parts/material related to the operations in the scrubber portion of the Conversion Building and in the KOH Regeneration Building.</p>		
<i>c. Technical Content</i> <p>This WBS element contains the detailed technical content for the HF scrubbing, KOH regeneration, and deionized water portions of conversion operations.</p>		

**Work Breakdown Structure**

**1.01.01.02.05**

**N<sub>2</sub> Lease**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b> DUF6 Conversion Operations		<b>2. Date Initiated</b> 03/06/09
<b>3. WBS Element</b> 1.01.01.02.05	<b>4. WBS Element Title</b> N2 Lease (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b> Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b> None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> Safe and compliant operations of the N2 system including interfaces with conversion operations.		
<i>b. Cost Content</i> This WBS element summarizes the lease costs for the N2 system.		
<i>c. Technical Content</i> This WBS element contains the contractual requirements for leasing the on-site N2 system.		



**Work Breakdown Structure**

**1.01.01.03**

**Maintenance**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/5/09
<b>3. WBS Element</b>  1.01.01.03	<b>4. WBS Element Title</b>  Maintenance (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <p>The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations.</p> <ul style="list-style-type: none"> <li>○ Prepare and implement procedures</li> <li>○ Schedule and implement maintenance of systems, components, vehicles, building and grounds</li> <li>○ Maintain planned spare parts</li> <li>○ Maintain maintenance database and records and documentation</li> <li>○ Prepare, schedule and issue work packages</li> <li>○ Staff for 24/7 week operations</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element is for maintenance of plant and cylinder yard equipment.</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe, including regular and rotating shift, by union and non-union</li> <li>○ ODC that including equipment, material, subcontracts, travel</li> <li>○ Does not include relocation</li> <li>○ Does not include railroad costs covered elsewhere</li> </ul>		

**Work Breakdown Structure**

**1.01.01.03.01**

**Maintenance- Systems**

**Work Breakdown Structure**

**1.01.01.03.02**

**Maintenance- Buildings, Yards, Structures**

**Work Breakdown Structure**

**1.01.01.03.03**

**Maintenance- Roads and Railroads**

**Work Breakdown Structure**

**1.01.01.03.04**

**Maintenance- Vehicles**

**Work Breakdown Structure**

**1.01.01.04**

**Utilities**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.01.04	<b>4. WBS Element Title</b>  Plant Utilities (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of all utilities, manage and negotiate if needed any change in rate structures and usage by use of specific utility subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.		
<i>b Cost Content</i> This WBS element will summarize that portion of the Paducah utility cost that covers all electric, water, and natural gas for the DUF6 conversion site, which includes Conversion Building, Administration Building, miscellaneous structures and the Cylinder Yard Operations.		
<i>c Technical Content</i> The technical content elements include all costs for utility usage at the Paducah Conversion Site.		



**Work Breakdown Structure**

**1.01.01.04.01**

**Utilities-Water**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.01.04.01	<b>4. WBS Element Title</b>  Plant Utilities – Water (Service) (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p>a. <i>Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of water throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific water subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p>b. <i>Cost Content</i> This WBS element will summarize that portion of the Paducah utility cost that covers service water usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, miscellaneous structures and the Cylinder Yard Operations.</p>		
<p>c. <i>Technical Content</i> The following technical content elements include all costs for water usage the Paducah Conversion Site. This includes all service water and potable water.</p>		

**Work Breakdown Structure**

**1.01.01.04.02**

**Utilities-Sewer**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.01.04.02	<b>4. WBS Element Title</b>  Plant Utilities – Sewer (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p>a. <i>Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of sewer throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific sewer subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p>b. <i>Cost Content</i> This WBS element will summarize that portion of the Paducah utility cost that covers sewer usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, miscellaneous structures and the Cylinder Yard Operations.</p>		
<p>c. <i>Technical Content</i> The following technical content elements include all costs for sewer usage the Paducah Conversion Site.</p>		

**Work Breakdown Structure**

**1.01.01.04.03**

**Utilities-Natural Gas**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.01.04.03	<b>4. WBS Element Title</b>  Plant Utilities – Natural Gas (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p>a. <i>Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of natural gas throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific natural gas subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p>b. <i>Cost Content</i> This WBS element will summarize that portion of the Paducah utility cost that covers natural gas usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, and miscellaneous structures.</p>		
<p>c. <i>Technical Content</i> The following technical content elements include all costs for natural gas usage the Paducah Conversion Site.</p>		

**Work Breakdown Structure**

**1.01.01.04.04**

**Utilities-Electrical**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.01.04.04	<b>4. WBS Element Title</b>  Plant Utilities – Electrical (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p>a. <i>Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of electric power throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific electric subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p>b. <i>Cost Content</i> This WBS element will summarize that portion of the Paducah utility cost that covers eclectic power usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, cylinder yard, and miscellaneous structures.</p>		
<p>c. <i>Technical Content</i> The following technical content elements include all costs for electric power usage for the Paducah Conversion Site.</p>		



**Work Breakdown Structure**

**1.01.01.04.05**

**Utilities-Other Utilities**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.01.04.05	<b>4. WBS Element Title</b>  Plant Utilities – Other Utilities (Potable Water) (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p>a. <i>Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of water throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific water subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p>b. <i>Cost Content</i> This WBS element will summarize that portion of the Paducah utility cost that covers portable water usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, miscellaneous structures and the Cylinder Yard Operations.</p>		
<p>c. <i>Technical Content</i> The following technical content elements include all costs for water usage the Paducah Conversion Site. This includes all potable water.</p>		

**Work Breakdown Structure**

**1.01.02**

**Cylinder, Product, & Waste Management**

**Work Breakdown Structure**

**1.01.02.01**

**Cylinder Management & Support**

## Work Breakdown Structure

### WORK BREAKDOWN STRUCTURE DICTIONARY ELEMENT DEFINITION

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.02.01	<b>4. WBS Element Title</b>  Cylinder Management & Support (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Engineering: <ul style="list-style-type: none"> <li>- Provide rigging and handling support</li> <li>- Provide cylinder inspection support</li> </ul> </li> <li>○ Procurement: <ul style="list-style-type: none"> <li>- Establish subcontracts of cylinder S &amp; M support as needed.</li> </ul> </li> <li>○ Operations: <ul style="list-style-type: none"> <li>- Cylinder surveillance and maintenance at the site</li> <li>- Inspection and stage cylinders for conversion operations</li> <li>- Transport cylinders to conversion facility</li> <li>- Assist in the cylinder staging and movement of conveyances as needed (including rail operations)</li> <li>- Data input to the Cylinder Information Database (CID), NMC&amp;A, waste and product databases</li> <li>- Staff for 8 hours/5 day per week operation</li> </ul> </li> </ul>		
<p><i>b Cost Content</i></p> <p>The following cost elements will be charged to the WBS element:</p> <ul style="list-style-type: none"> <li>○ Labor</li> <li>○ Subcontract Effort</li> <li>○ Supplies</li> <li>○ Materials</li> <li>○ Equipment</li> </ul>		
<p><i>c Technical Content</i></p> <p>Includes all procurement and support effort required for Cylinder Surveillance and Maintenance (S&amp;M). The following are included in this WBS element:</p> <ul style="list-style-type: none"> <li>○ Cylinder Yard Transition</li> <li>○ Cylinder surveillance and maintenance in accordance with the approved Cylinder Surveillance &amp; Maintenance Plan</li> <li>○ Cylinder staging and handling for conversion operations</li> </ul>		

**Work Breakdown Structure**

**1.01.02.01.01**

**Cylinder Yard**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.02.01.01	<b>4. WBS Element Title</b>  Cylinder Yard (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Engineering: <ul style="list-style-type: none"> <li>- Provide rigging and handling support</li> <li>- Provide cylinder inspection support</li> </ul> </li> <li>○ Procurement: <ul style="list-style-type: none"> <li>- Establish subcontracts of cylinder S &amp; M support as needed.</li> </ul> </li> <li>○ Operations: <ul style="list-style-type: none"> <li>- Cylinder surveillance and maintenance at the site</li> <li>- Inspection and stage cylinders for conversion operations</li> <li>- Transport cylinders to conversion facility full cylinder staging yard</li> <li>- Assist in the cylinder staging and movement of conveyances as needed</li> <li>- Data input to the Cylinder Information Database (CID), NMC&amp;A, waste and product databases</li> <li>- Staff for 8 hours/5 day per week operation</li> </ul> </li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements will be charged to the WBS element:</p> <ul style="list-style-type: none"> <li>○ Labor</li> <li>○ Subcontract Effort</li> <li>○ Supplies</li> <li>○ Materials</li> <li>○ Equipment</li> </ul>		
<p><i>c. Technical Content</i></p> <p>Includes all procurement and support effort required for Cylinder Surveillance and Maintenance (S&amp;M). The following are included in this WBS element:</p> <ul style="list-style-type: none"> <li>○ Cylinder Yard Transition</li> <li>○ Cylinder surveillance and maintenance in accordance with the approved Cylinder Surveillance &amp; Maintenance Plan</li> <li>○ Cylinder staging and handling for conversion operations</li> </ul>		

**Work Breakdown Structure**

**1.01.02.01.02**

**Cylinder Material & Disposition Support**



**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.01.02.01.02	<b>4. WBS Element Title</b>  Cylinder Material & Disposition Support (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Engineering <ul style="list-style-type: none"> <li>- Provide rigging and handling support</li> <li>- Provide cylinder inspection support</li> </ul> </li> <li>○ Procurement <ul style="list-style-type: none"> <li>- Establish subcontracts as needed for cylinder handling and transportation</li> </ul> </li> <li>○ Operations <ul style="list-style-type: none"> <li>- HF operations</li> <li>- Transport cylinders to conversion operations from full cylinder staging yard</li> <li>- Transport cylinders during conversion operation activities</li> <li>- Rail car positioning for transportation of HF acid and oxide</li> <li>- Operation of effluent treatment system, demineralized water system &amp; KOH regeneration</li> <li>- System in the KOH Building</li> <li>- Staff for 8 hours/5 day per week operation</li> </ul> </li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements will be charged to the WBS element:</p> <ul style="list-style-type: none"> <li>○ Labor</li> <li>○ Subcontract Effort</li> <li>○ Supplies</li> <li>○ Materials</li> <li>○ Equipment</li> </ul>		
<p><i>c. Technical Content</i></p> <p>Includes all procurement and support effort required for HF handling, and cylinder handling related to conversion operations and transportation. The following are included in this WBS element:</p> <ul style="list-style-type: none"> <li>○ HF handling</li> <li>○ Cylinder staging and handling for conversion operations</li> <li>○ Cylinder staging and handling for transportation offsite</li> <li>○ Operations in the KOH Building</li> </ul>		

**Work Breakdown Structure**

**Work Breakdown Structure**

**1.01.02.02**

**Waste Management & Transport**

**Work Breakdown Structure**

**1.01.02.02.01**

**Waste Transportation**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF <sub>6</sub> Conversion Project		<b>2. Date Initiated</b>  3/05/09
<b>3. WBS Element</b>  1.01.02.02.01	<b>4. WBS Element Title</b>  Waste Transportation (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS covers transportation costs relative to waste shipments including Uranium oxide (packaged in recycled UF<sub>6</sub> cylinders), empty cylinders (not meeting DOT packaging requirements) and all secondary waste (packaged in drums or boxes) generated during conversion and cylinder yard operations.</p>		
<p><i>b. Cost Elements</i></p> <ul style="list-style-type: none"> <li>○ Labor</li> <li>○ Subcontractor Effort</li> <li>○ Transportation Fees</li> <li>○ Transload Costs</li> <li>○ Rail maintenance costs</li> </ul>		
<p><i>c. Technical Approach/Assumptions</i> The following elements are included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Rail transportation from conversion sites to disposal facility or transload facility</li> <li>○ Transload operations and truck shipments for disposal (as needed)</li> <li>○ Transportation fees</li> <li>○ Transload costs</li> <li>○ ODC that including equipment, material, subcontracts, travel/relocation</li> <li>○ Rail Maintenance including railcars and rail track</li> </ul>		
<p><i>c. Deliverables</i></p> <ul style="list-style-type: none"> <li>○ Transportation services Contract/Tender</li> <li>○ Transload services Contract</li> <li>○ Prepare and maintain Transportation Program</li> <li>○ Prepare and maintain Transportation procedures</li> <li>○ Rail Maintenance plans and procedures (including schedule for maintenance)</li> </ul>		

**Work Breakdown Structure**

**1.01.02.02.02**

**Waste Disposal**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/05/09
<b>3. WBS Element</b>  1.01.02.02.02	<b>4. WBS Element Title</b>  Waste Disposal (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> This WBS element is for costs associated with disposal of primary waste streams, uranium oxide and empty cylinders only. All other secondary waste streams are captured under WBS element 1.0X.02.02.04.		
<i>b. Technical Approach/Assumptions</i> Establish a disposal path for primary waste streams, uranium oxide and empty cylinders.		
<i>c. Cost Elements</i> <ul style="list-style-type: none"><li>○ Disposal costs</li><li>○ Subcontract Labor</li><li>○ No labor costs are included in this WBS</li></ul>		
<i>d. Deliverables</i> <ul style="list-style-type: none"><li>○ Establish waste treatment and or disposal contracts at commercial treatment storage and disposal facilities.</li><li>○ Establish waste certification program.</li><li>○ Track and report disposal volumes and costs.</li><li>○ Obtain certificates of disposal.</li></ul>		

**Work Breakdown Structure**

**1.01.02.02.03**

**Waste Sampling and Characterization**



**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/05/09
<b>3. WBS Element</b>  1.01.02.02.03	<b>4. WBS Element Title</b>  Waste Sampling and Characterization (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> This WBS element is for costs associated with sampling and analysis necessary to perform characterization for waste disposal.		
<i>b. Technical Approach/Assumptions</i> Establish sampling and analysis necessary to perform characterization for waste disposal.		
<i>c. Cost Elements</i> <ul style="list-style-type: none"> <li>○ Analytical costs</li> <li>○ Subcontract Labor</li> <li>○ Labor costs are not included in this WBS.</li> </ul>		
<i>d. Deliverables</i> <ul style="list-style-type: none"> <li>○ Prepare Sampling and Analysis procedures</li> <li>○ Prepare Sampling and Analysis Plans</li> <li>○ Develop database to track and record sampling and analysis, and characterization</li> </ul>		

**Work Breakdown Structure**

**1.01.02.02.04**

**Secondary Waste Preparation**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/05/09
<b>3. WBS Element</b>  1.01.02.02.04	<b>4. WBS Element Title</b>  Secondary Waste Preparation (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS element is for costs associated with treatment (as necessary) and disposal of secondary wastes generated from site activities. This WBS element does not include oxide, empty cylinders or HF.</p>		
<p><i>b. Technical Approach/Assumptions</i> Establish a disposal path for LLRW/Mixed waste, Hazardous waste (non-radioactive), industrial waste, and recycling.</p>		
<p><i>c. Cost Elements</i></p> <ul style="list-style-type: none"> <li>○ Subcontract Labor</li> <li>○ Material costs</li> </ul>		
<p><i>d. Deliverables</i></p> <ul style="list-style-type: none"> <li>○ Establish Task Orders/BOAs/contracts with treatment and disposal facilities to ensure disposition of all secondary generated wastes.</li> <li>○ Develop and implement a Waste Minimization Pollution Prevention Program</li> </ul>		

**Work Breakdown Structure**

**1.01.02.03**

**Product Sales**

**Work Breakdown Structure**

**1.01.02.03.01**

**AqHF Sales**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/5/09
<b>3. WBS Element</b>  1.01.02.03.01	<b>4. WBS Element Title</b>  AqHF Sales (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> This WBS element is for the sale of AqHF.		
<i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers AqHF sales during Operations: <ul style="list-style-type: none"><li>○ Labor (plus fringe, including regular and rotating shift, by union and non-union) to prepare and load the material in trucks or train cars, accounted for elsewhere</li><li>○ ODC that including equipment, material, subcontracts, travel/relocation</li><li>○ Income from sales to Sovay pursuant to UDS/Solvay contract dated May 1, 2006</li></ul>		
<i>c. Technical Content</i> Volumes and prices as presented in RFP and UDS/Solvay contract.		

**Work Breakdown Structure**

**1.01.02.03.02**

**Other Product Sales**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  10/06/08
<b>3. WBS Element</b>  1.01.02.03.02	<b>4. WBS Element Title</b>  Other Product Sales (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>d. Work Statement</i> This WBS element is for the sale of other product including: DUF6 and material resulting from the conversion process (CaF2 and uranium oxide). Note: This WBS does not include the sale of AqHF.		
<i>e. Cost Content</i> The following cost elements are to be included in this WBS element that covers HF sales during Operations: <ul style="list-style-type: none"> <li>○ Labor (plus fringe, including regular and rotating shift, by union and non-union) to prepare and load the material in trucks or train cars, accounted for elsewhere</li> <li>○ ODC that including equipment, material, subcontracts, travel/relocation</li> <li>○ Income from sales</li> </ul>		
<i>f. Technical Content</i> Volumes and prices as presented in RFP.		



**Work Breakdown Structure**

**1.01.03**

**Site Support**

**Work Breakdown Structure**

**1.01.03.01**

**Site ES&H**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09	
<b>3. WBS Element</b>  1.01.03.01	<b>4. WBS Element Title</b>  Site ES&H (Paducah)		
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>	
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>		
<b>10. Element Task Description</b>			
<p><i>a. Work Statement</i> This WBS element is for ES&amp;H Services to implement and maintain environmental, safety, and health programs (including radiation control (RADCON)). This WBS element consists of the following tasks:</p> <ul style="list-style-type: none"> <li>○ Integrated Safety Management System (ISMS) implementation assistance</li> <li>○ Regulatory Interface for environmental and safety issues</li> <li>○ Site assessments</li> <li>○ Plan &amp; procedure development</li> <li>○ ES&amp;H reporting/trending</li> <li>○ Hazard analysis and mitigation assistance</li> <li>○ Dosimetry and bioassay services</li> <li>○ Occupational medicine</li> <li>○ Respirator Services</li> <li>○ Safety incentive program</li> </ul>			
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ ODC that includes travel, equipment, materials and subcontracts required to maintain ES&amp;H services</li> </ul>			
<p><i>c. Technical Content</i> Provide professional Environment, Safety and Health services to ensure safe, compliant plant operations. Specific content includes:</p> <ul style="list-style-type: none"> <li>○ Maintain compliant ES&amp;H programs</li> <li>○ Perform ES&amp;H assessments, serving as subject matter experts in related fields</li> <li>○ Develop and implement ES&amp;H plans and procedures</li> <li>○ Maintain required documentation</li> <li>○ Maintain external and internal dosimetry programs</li> <li>○ Provide occupational medicine services (subcontract)</li> <li>○ Provide respirator services directly or by subcontract</li> <li>○ Maintain ES&amp;H related instrumentation</li> </ul>			

**Work Breakdown Structure**

**1.01.03.02**

**Safeguards, Security & Emergency Preparedness**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.03.02	<b>4. WBS Element Title</b>  Safeguards, Security & Emergency Preparedness (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The SS&amp;EP WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Maintain plant security systems, policies, and procedures</li> <li>○ Maintain plant NMCA plans, policies, and procedures</li> <li>○ Procure NMCA services from landlord to support plant</li> <li>○ Coordinate external security requirements</li> <li>○ Report incidents of security concern</li> <li>○ Provide security training as required</li> <li>○ Coordinate emergency management exercises</li> <li>○ Maintain emergency plans and procedures</li> <li>○ Coordinate/provide emergency management training</li> </ul>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ ODC that includes travel, materials and subcontractor support required to maintain Safeguard Security and Emergency Preparedness services</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Establish and maintain security at the plant site in accordance with DOE and site landlord requirements</li> <li>○ Implement safeguards for nuclear materials (NMCA)</li> <li>○ Maintain plant emergency preparedness plans and procedures.</li> </ul>		

**Work Breakdown Structure**

**1.01.03.03**

**Compliance**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.03.03	<b>4. WBS Element Title</b>  Compliance (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The Compliance WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Review incidents and adverse conditions for reportability (ORPS and PAAA)</li> <li>○ Perform assessments</li> <li>○ Review implementation of regulatory requirements</li> <li>○ Maintain required documentation</li> </ul>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ ODC for procurement/development and maintenance of ORPS and PAAA reporting system (software).</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Manage regulatory compliance activities for the plant.</li> <li>○ Manage ORPS assessments and reporting</li> <li>○ Manage PAAA assessments and reporting and implementation reviews.</li> </ul>		

**Work Breakdown Structure**

**1.01.03.04**

**Quality Assurance & Quality  
Control**



**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.03.04	<b>4. WBS Element Title</b>  Quality Assurance & Quality Control (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The SS&amp;EP WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Coordinate QA &amp; QC support &amp; assessments of the procurement process from preparation of requisitions through acceptance of product &amp; documentation.</li> <li>○ Provide QA &amp; QC assessments for material; equipment; and/or services.</li> </ul>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Travel</li> </ul>		
<p><i>c. Technical Content</i> QA &amp; QC support &amp; assessments of material; equipment &amp; services providers.</p>		

**Work Breakdown Structure**

**1.01.03.05**

**Plant Engineering**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.03.05	<b>4. WBS Element Title</b>  Plant Engineering (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><b>a. Work Statement</b>  The Plant Engineering WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Assist in the development of operations and maintenance procedures</li> <li>○ Support the maintenance organization in the preparation of work packages</li> <li>○ Perform required analyses for systems and equipment maintenance</li> <li>○ Schedule surveillances in conjunction with maintenance</li> <li>○ Maintain configuration control and management of plant drawings and specifications</li> <li>○ Develop and maintain engineering plans and procedures</li> <li>○ Engineering support to the facility in the following specialties: <ul style="list-style-type: none"> <li>- Process</li> <li>- Electrical</li> <li>- Mechanical</li> <li>- I&amp;C</li> <li>- Facility</li> </ul> </li> </ul>		
<p><b>a. Cost Content</b>  The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ ODC that includes travel, equipment, parent company and subcontractor support.</li> </ul>		
<p><b>c. Technical Content</b>  Plant Engineering support services</p>		

**Work Breakdown Structure**

**1.01.03.06**

**Business Systems**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.03.06	<b>4. WBS Element Title</b>  Business Systems (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The Business Systems WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Provide procurement services to plant organizations for materials and supplies</li> <li>○ Maintain plant project controls system summarizing and reporting plant performance/progress</li> <li>○ Provide Cost Accounting support to the plant including processing of invoices &amp; data entry into cost accounting systems</li> <li>○ Maintain plant records and documents, enter records and documents into management systems</li> </ul>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Travel</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Procure plant supplies (Procurement system)</li> <li>○ Measure and report plant/program performance (Project controls system)</li> <li>○ Manage plant cost accounting system</li> <li>○ Maintain records and documentation system</li> </ul>		

**Work Breakdown Structure**

**1.01.03.07**

**Human Resources/ Industrial Relations**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b> DUF6 Conversion Project		<b>2. Date Initiated</b> 3/9/09
<b>3. WBS Element</b> 1.01.03.07	<b>4. WBS Element Title</b> Human Resources and Industrial Relations (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b> Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b> None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS element is for Human Resources (HR) and Labor Relations (LR) located at the plant, reporting to Plant Manager and dotted line to Corporate.</p> <p>HR addresses human resources including hiring, processing in, new employee orientation, benefits and pay issues, performance issues and performance appraisals, working with management.</p> <p>LR addresses primarily union related tasks, including contracts and bargaining unit topics for hourly workers.</p>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe, including regular and rotating shift, by union and non-union</li> <li>○ ODC that including equipment, material, subcontracts, travel/relocation</li> </ul>		

**Work Breakdown Structure**

**1.01.03.08**

**Training**



**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/9/09
<b>3. WBS Element</b>  1.01.03.08	<b>4. WBS Element Title</b>  Training (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> This WBS element is for required Training at the plant.		
<i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations: <ul style="list-style-type: none"><li>○ Labor plus fringe, including regular and rotating shift, by union and non-union</li><li>○ ODC that including equipment, material, subcontracts, travel/relocation</li><li>○ Assume labor costs of those being trained are under the “home” WBS for those being trained</li><li>○ Assumes those on board on day 1 have received all training necessary but will have recurring or compliance training as appropriate</li><li>○ New hires will receive substantial training in startup + recurring or compliance training thereafter.</li><li>○ Training is for costs of actual training, in-house or subcontract</li></ul>		

**Work Breakdown Structure**

**1.01.03.09**

**Information Technology**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/9/09
<b>3. WBS Element</b>  1.01.03.09	<b>4. WBS Element Title</b>  Information Technology (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS element is for required Information Technology at the plant. It does not include any corporate activities. Activities include direct support of all plant personnel and systems. This includes PC and software support. While the personnel support the plant, a significant amount of support is also provided by corporate to both plants.</p>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"><li>○ Labor plus fringe, including regular and rotating shift, by union and non-union</li><li>○ ODC that including equipment, material, subcontracts, travel/relocation</li></ul>		

**Work Breakdown Structure**

**1.01.04**

**Plant Management**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.04	<b>4. WBS Element Title</b>  Plant Management (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> Provide site-wide management and subcontract administration functions.		
<i>b. Cost Content</i> This WBS element summarizes costs associated with WBS elements for Paducah plant management, conversion operations, and logistics/cylinder management during Transition, Start-up and Operations and will include labor, fringe, material, subcontracts, and travel.		
<i>c. Technical Content</i> <ul style="list-style-type: none"> <li>○ Plant Management</li> <li>○ Oversight of Conversion Operations, Cylinder/Product/Waste Management, and Site Support functions which will be described in detail in other WBS elements.</li> </ul>		

**Work Breakdown Structure**

**1.01.04.01**

**Plant Manager**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.04.01	<b>4. WBS Element Title</b>  Plant Manager (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Provide plant management services and common infrastructure support</li> <li>○ Provide site level administrative support</li> <li>○ Site lead on Emerging Issues such as audits, safety reviews, and other unplanned activities.</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Office supplies</li> <li>○ Common safety gear, PPE for site</li> <li>○ Subcontracts for operating contractors laundry and garbage collection</li> <li>○ Travel between sites</li> <li>○ Relocation costs (none included)</li> <li>○ Staff professional development, including travel and professional society dues</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Plant Management</li> <li>○ Oversight of Conversion Operations, Cylinder/Product/Waste Management, and Site Support functions which will be described in detail in lower WBS levels</li> <li>○ Maintain subcontracts for site-wide contracts listed in a. above</li> <li>○ Coordinate site responses to Emerging Issues</li> </ul>		

**Work Breakdown Structure**

**1.01.04.02**

**Conversion Operations Manager**



**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.01.04.02	<b>4. WBS Element Title</b>  Conversion Operations Manager (Paducah)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Provide management of conversion operations</li> <li>○ Provide administrative support for conversion operations</li> <li>○ Develop and maintain operating and maintenance procedures</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ This is a labor only WBS element</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Conversion operations management and administrative support</li> <li>○ Oversight of DUF6 Conversion Operations functions during transition, startup and full operations will be described in detail in other WBS levels</li> <li>○ Oversight of plant Maintenance functions during transition, startup and full operations which will be described in detail in other WBS levels</li> <li>○ Implement utility subcontracts</li> <li>○ Manage N2 Lease contract</li> </ul>		

**Work Breakdown Structure**

**1.01.04.03**

**Logistics Manager**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09	
<b>3. WBS Element</b>  1.01.04.03	<b>4. WBS Element Title</b>  Logistics Manager (Paducah)		
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>	
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>		
<b>10. Element Task Description</b>			
<i>a. Work Statement</i> <ul style="list-style-type: none"> <li>○ Provide management of logistics/cylinder operations</li> <li>○ Provide administrative support for logistics/cylinder operations</li> <li>○ Develop and maintain operating and maintenance procedures for logistics/cylinder operations</li> </ul>			
<i>b. Cost Content</i> <p>The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ This is a labor only WBS element</li> </ul>			
<i>c. Technical Content</i> <ul style="list-style-type: none"> <li>○ Logistics/cylinder operations management and administrative support</li> <li>○ Oversight of logistics/cylinder operations functions during transition, startup and full operations</li> </ul>			

**Work Breakdown Structure**

**1.02**

**Portsmouth Plant**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/2009	
<b>3. WBS Element</b>  1.02	<b>4. WBS Element Title</b>  Portsmouth Plant		
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>	
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>		
<b>10. Element Task Description</b>			
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Integrated safety management</li> <li>○ Safeguards, security and emergency preparedness</li> <li>○ Plant engineering and configuration management</li> <li>○ Safe and compliant operations of conversion facilities and cylinder yards</li> <li>○ Retrieve, transport and process DUF6 cylinders</li> <li>○ Dispose of conversion products, all waste forms, and empty and heel cylinders</li> </ul>			
<p><i>b. Cost Content</i></p> <p>Summary for the Portsmouth Plant for conversion operations; cylinder, product, and waste management; site support; and Portsmouth Plant management during Transition, Start-up, and Operations. Lower level WBS elements will contain labor, fringe, material, equipment, travel, and subcontracts associated with all phases of the Portsmouth Plant DUF6 conversion process covering 5 years.</p>			
<p><i>c. Technical Content</i></p> <p>Lower level WBS levels will provide the detailed technical content associated with the start-up and operation of the Portsmouth DUF6 Conversion Plant which will convert DOE's inventory of DUF6 currently stored at Portsmouth. Lower level technical content will also include cylinder, product, and waste management activities and site support activities.</p>			

**Work Breakdown Structure**

**1.02.01**

**Conversion Operations Management**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01	<b>4. WBS Element Title</b>  Conversion Operations (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Prepare/maintain operations and maintenance plans and procedures</li> <li>○ Process DUF6 cylinders</li> <li>○ Modify cylinders and fill with oxide</li> <li>○ Condense and transfer HF</li> <li>○ Operate and maintain conversion and regeneration facilities</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element summarizes costs associated with WBS elements for Start-Up, Conversion Operations, Maintenance, and Utilities associated with operations at the DUF6 Conversion Plant and will include labor, fringe, material, equipment, subcontracts, and travel.</p>		
<p><i>c. Technical Content</i></p> <p>Lower level WBS elements will provide the detailed technical content for start-up, conversion operations, maintenance, and utilities associated with conversion of DUF6. The technical content shall include preparation/modification of plans and procedures for start-up and operations and maintenance, process materials, processing steps, production, contractual requirements for operation, and maintenance of site facilities.</p>		

**Work Breakdown Structure**

**1.02.01.01**

**Start-Up**



**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.01	<b>4. WBS Element Title</b>  Start-Up (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Provide and implement design changes as required</li> <li>○ Prepare/modify O&amp;M procedures as required</li> <li>○ Complete ORR and RA requirements</li> <li>○ Execute Start-Up Plan</li> <li>○ Conduct partial conversion operations as described in WBS 1.01.01.02</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element which covers Transition and Start-Up of DUF6 conversion operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Nuclear Safety support</li> <li>○ Start-up testing support</li> <li>○ Preparation/modification of operations plans and procedures</li> <li>○ ORR closeout</li> <li>○ Readiness Assessment</li> <li>○ Conversion system modifications during transition and start-up</li> <li>○ Equipment and materials during transition and start-up of conversion operations</li> </ul>		
<p><i>c. Technical Content</i></p> <p>This and lower level WBS elements provide detailed technical content for:</p> <ul style="list-style-type: none"> <li>○ Modifications to operations plans, procedures, and related training.</li> <li>○ First-use of hazardous materials</li> <li>○ Hot functional testing</li> <li>○ Operations evolutions and evaluations for each line, as required, to reach full plant capacity</li> </ul>		

**Work Breakdown Structure**

**1.02.01.01.01**

**Plans & Procedures**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.01.01	<b>4. WBS Element Title</b>  Plans & Procedures (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> At the start of the contract (post-ORR) detailed planning for hot start-up will commence. During start-up evolutions experience gained and lessons learned will result in the modification of many operational plans and procedures.</p>		
<p><i>b. Cost Content</i> Cost elements for this WBS include the following subcontracted activities:</p> <ul style="list-style-type: none"> <li>○ Nuclear Safety support</li> <li>○ Plans and procedures</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Nuclear Safety planning support for hot startup activities post-ORR during the 3-month Transition period.</li> <li>○ Modifications of plans and procedures based on start-up experience and lessons learned.</li> </ul>		

**Work Breakdown Structure**

**1.02.01.01.02**

**Operations Transition/ORR Closeout**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.01.02	<b>4. WBS Element Title</b>  Operations Transition (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> Transition of conversion operations planning from the existing contractor to the new contractor will occur. This includes the orderly transfer of resource planning, accountability and training. It also requires assurances that any remaining ORR findings are effectively addressed.		
<i>b. Cost Content</i> Cost elements for this WBS include labor and fringe benefits for one complete daytime shift during the 3-month Transition period. Subcontract costs related to training and ORR closeouts are also included.		
<i>c. Technical Content</i> One complete daytime shift will address preparations for start-up of conversion operations. Any additional training for operations will occur.		

**Work Breakdown Structure**

**1.02.01.01.03**

**Readiness Assessment**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.01.03	<b>4. WBS Element Title</b>  Readiness Assessment (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Review the Operational Readiness Review preparation and results</li> <li>○ Prepare/modify facility O&amp;M procedures as required</li> <li>○ Modify staffing arrangements as needed</li> <li>○ Execute a Readiness Assessment satisfactory to the DOE</li> <li>○ Obtain DOE readiness to proceed notification</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element which covers Readiness Assessment by the DUF6 Operating Contractor</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Nuclear Safety support</li> <li>○ Preparation/modification of operations plans and procedures</li> <li>○ Readiness Assessment</li> <li>○ Conversion system modifications needed for full operations</li> <li>○ Equipment and materials during transition of conversion operations contractors</li> </ul>		
<p><i>c. Technical Content</i></p> <p>This WBS element provides detailed technical content for:</p> <ul style="list-style-type: none"> <li>○ Modifications to operations plans, procedures, and related training.</li> <li>○ Readiness assessment</li> <li>○ Operations evaluations for each line, as required, to permit full plant operation.</li> </ul>		

**Work Breakdown Structure**

**1.02.01.01.04**

**Option 1 for Hot Functional Testing**



**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.01.04	<b>4. WBS Element Title</b>  Option1 for Hot Functional Testing (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <p>Safe and compliant operations of conversion facilities from Startup Authorization through demonstration of full production capacity of the facility. All functions of the facility will be involved including:</p> <ul style="list-style-type: none"> <li>○ Integrated safety management</li> <li>○ Safeguards, security and emergency preparedness</li> <li>○ Plant engineering and configuration management</li> <li>○ Retrieve, transport and process DUF6 cylinders</li> <li>○ Preparation for shipment/shipment of conversion products, all waste forms, and empty and heel cylinders</li> <li>○ Necessary support operations</li> </ul> <p>The end point of the hot functional testing phase is when Management has agreed that the process equipment is operating as designed, operations and support personnel have demonstrated proficiency, and that the operating procedures can be satisfactorily performed. Closeout of the hot functional test phase will occur after documented completion of first use controls for the DUF<sub>6</sub> processes. Notification of closeout of the startup plan will be made by the contractor to the DOE Federal Project Director. This will constitute the transition to full normal operations for the processes.</p>		
<p><i>b. Cost Content</i></p> <p>This WBS element summarizes cost associated with activities from Startup Authorization through demonstration of full production capacity, including Startup testing, operations, maintenance and utilities. This WBS element will contain labor, fringe, material, equipment, travel, and subcontracts associated with this phase of plant operation.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for start-up, conversion operations, maintenance, and utilities associated with hot functional testing of the facility. The technical content shall include performance/modification of plans and procedures for start-up and operations and maintenance, process materials, processing steps, production, contractual requirements for operation, including N2.</p>		

**Work Breakdown Structure**

**1.02.01.02**

**Conversion Operations**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.02	<b>4. WBS Element Title</b>  Conversion Operations (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Move cylinders from FCS into the Conversion Building</li> <li>○ Load cylinders into autoclaves/appropriate vaporization system</li> <li>○ Vaporize DUF6 and transfer to converters</li> <li>○ Stabilize cylinder heels</li> <li>○ Modify cylinders</li> <li>○ Load cylinders with uranium oxide</li> <li>○ Condense HF and place in receiver tanks</li> <li>○ Transfer HF to outside Storage Tanks</li> <li>○ Use and regenerate KOH</li> <li>○ Generate deionized water</li> <li>○ Develop and maintain operating procedures</li> <li>○ Staff and operate 24 hour/7 day per week operation</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element which covers DUF6 conversion operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Equipment</li> <li>○ Material &amp; spare parts</li> <li>○ Subcontracts</li> <li>○ Lease costs for N2 system</li> </ul>		
<p><i>c. Technical Content</i></p> <p>This and lower level WBS elements provide detailed technical content for the operations phase of the DUF6 Conversion Plant. Cylinders containing DUF6 are moved from the FCS and loaded into autoclaves, heated, and DUF6 vapor is fed to conversion units. Oxide powder product is collected in hoppers, sampled and transferred to empty, modified cylinders for shipment off-site. HF vapor is condensed and transferred to HF holding tanks for shipment off-site. Residual off-gas HF is trapped using KOH. KOH will be regenerated using lime and producing CaF2 as a by-product. KOH will also be used in stabilizing the heels in the empty cylinders. Deionized water is generated and wastewater is treated.</p>		

**Work Breakdown Structure**

**1.02.01.02.01**

**Control & General Operations**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.02.01	<b>4. WBS Element Title</b>  Control & General Operations (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"><li>○ Supervision of conversion operations 24 hour/7 day per week</li><li>○ Develop and maintain operating procedures</li><li>○ Perform all tasks controlled from the ICS</li><li>○ Monitor/control HF and oxide transfers</li><li>○ Coordinate TSR surveillances</li></ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element will contain labor, fringe, material, equipment/spare parts, travel, and subcontracts associated with conversion plant operations.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for conversion operations and shall include performance/modification of plans and procedures for process materials, processing steps, production, and related contractual requirements for operation.</p>		

**Work Breakdown Structure**

**1.02.01.02.02**

**Cylinder & DUF<sub>6</sub> Handling (front end)**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.02.02	<b>4. WBS Element Title</b>  Cylinder & DUF6 Handling – front end (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Cylinder movement from Full Cylinder Storage pad into Conversion Building.</li> <li>○ Load cylinders into autoclaves or CER</li> <li>○ Vaporize DUF6 and transfer to converters</li> <li>○ Move empty cylinders to stabilization area</li> <li>○ Stabilize cylinder heels</li> <li>○ Necessary support operations</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element will contain labor, fringe, and cylinder related material/spare parts associated with vaporization operations.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for the front end operations conducted in the Conversion Building.</p>		

**Work Breakdown Structure**

**1.02.01.02.03**

**Cylinder & Oxide Handling & Modification  
(back end)**



**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.02.03	<b>4. WBS Element Title</b>  Cylinder & Oxide Handling & Modification – back end (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Modify cylinders for oxide loading</li> <li>○ Perform oxide powder handling operations</li> <li>○ Load cylinders with oxide</li> <li>○ Move loaded cylinders to staging area</li> <li>○ Operate waste evaporators</li> <li>○ Necessary support operations</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element will contain labor and fringe, plus material/equipment/spare parts associated with hot shop operations involving modifying cylinders with flanges.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for the back end of conversion operations conducted in the Conversion Building.</p>		

**Work Breakdown Structure**

**1.02.01.02.04**

**HF Scrubbing, KOH Regeneration & DIW**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.01.02.04	<b>4. WBS Element Title</b>  HF Scrubbing, KOH Regeneration & DIW (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Condense HF and place in receiver tanks</li> <li>○ Transfer HF to outside Storage Tanks</li> <li>○ Use and regeneration of KOH</li> <li>○ Generate deionized water</li> <li>○ Operation of ETS</li> <li>○ Necessary support operations</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element will contain labor and fringe plus material/equipment/spare parts/material related to the operations in the scrubber portion of the Conversion Building and in the KOH Regeneration Building.</p>		
<p><i>c. Technical Content</i></p> <p>This WBS element contains the detailed technical content for the HF scrubbing, KOH regeneration, and deionized water portions of conversion operations.</p>		

**Work Breakdown Structure**

**1.02.01.02.05**

**N<sub>2</sub> Lease**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b> DUF6 Conversion Operations		<b>2. Date Initiated</b> 03/06/09
<b>3. WBS Element</b> 1.02.01.02.05	<b>4. WBS Element Title</b> N2 Lease (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b> Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b> None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> Safe and compliant operations of the N2 system including interfaces with conversion operations.		
<i>b. Cost Content</i> This WBS element summarizes the lease costs for the N2 system.		
<i>c. Technical Content</i> This WBS element contains the contractual requirements for leasing the on-site N2 system.		

**Work Breakdown Structure**

**1.02.01.03**

**Maintenance**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/5/09
<b>3. WBS Element</b>  1.02.01.03	<b>4. WBS Element Title</b>  Maintenance (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <p>The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations.</p> <ul style="list-style-type: none"> <li>○ Prepare and implement procedures</li> <li>○ Schedule and implement maintenance of systems, components, vehicles, building and grounds</li> <li>○ Maintain planned spare parts</li> <li>○ Maintain maintenance database and records and documentation</li> <li>○ Prepare, schedule and issue work packages</li> <li>○ Staff for 24/7 week operations</li> </ul>		
<p><i>b. Cost Content</i></p> <p>This WBS element is for maintenance of plant and cylinder yard equipment.</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe, including regular and rotating shift, by union and non-union</li> <li>○ ODC that including equipment, material, subcontracts, travel</li> <li>○ Does not include relocation</li> <li>○ Does not include railroad costs covered elsewhere</li> </ul>		

**Work Breakdown Structure**

**1.02.01.03.01**

**Maintenance- Systems**



**Work Breakdown Structure**

**1.02.01.03.02**

**Maintenance- Buildings, Yards, Structures**

**Work Breakdown Structure**

**1.02.01.03.03**

**Maintenance- Roads and Railroads**

**Work Breakdown Structure**

**1.02.01.03.04**

**Maintenance- Vehicles**

**Work Breakdown Structure**

**1.02.01.04**

**Utilities**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.01.04	<b>4. WBS Element Title</b>  Plant Utilities (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of all utilities, manage and negotiate if needed any change in rate structures and usage by use of specific utility subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.		
<i>b Cost Content</i> This WBS element will summarize that portion of the Portsmouth utility cost that covers all electric, water, and natural gas for the DUF6 conversion site, which includes Conversion Building, Administration Building, miscellaneous structures and the Cylinder Yard Operations.		
<i>c Technical Content</i> The technical content elements include all costs for utility usage at the Portsmouth Conversion Site.		

**Work Breakdown Structure**

**1.02.01.04.01**

**Utilities-Water**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.01.04.01	<b>4. WBS Element Title</b>  Plant Utilities – Water (Service) (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of water throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific water subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p><i>b. Cost Content</i> This WBS element will summarize that portion of the Portsmouth utility cost that covers service water usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, miscellaneous structures and the Cylinder Yard Operations.</p>		
<p><i>c. Technical Content</i> The following technical content elements include all costs for water usage the Portsmouth Conversion Site. This includes all service water and potable water.</p>		

**Work Breakdown Structure**

**1.02.01.04.02**

**Utilities-Sewer**



**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.01.04.02	<b>4. WBS Element Title</b>  Plant Utilities – Sewer (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p>a. <i>Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of sewer throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific sewer subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p>b. <i>Cost Content</i> This WBS element will summarize that portion of the Portsmouth utility cost that covers sewer usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, miscellaneous structures and the Cylinder Yard Operations.</p>		
<p>c. <i>Technical Content</i> The following technical content elements include all costs for sewer usage the Portsmouth Conversion Site.</p>		

**Work Breakdown Structure**

**1.02.01.04.03**

**Utilities-Natural Gas**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.01.04.03	<b>4. WBS Element Title</b>  Plant Utilities – Natural Gas (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p>a. <i>Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of natural gas throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific natural gas subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p>b. <i>Cost Content</i> This WBS element will summarize that portion of the Portsmouth utility cost that covers natural gas usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, and miscellaneous structures.</p>		
<p>c. <i>Technical Content</i> The following technical content elements include all costs for natural gas usage the Portsmouth Conversion Site.</p>		

**Work Breakdown Structure**

**1.02.01.04.04**

**Utilities-Electrical**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.01.04.04	<b>4. WBS Element Title</b>  Plant Utilities – Electrical (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of electric power throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific electric subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p><i>b. Cost Content</i> This WBS element will summarize that portion of the Portsmouth utility cost that covers eclectic power usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, cylinder yard, and miscellaneous structures.</p>		
<p><i>c. Technical Content</i> The following technical content elements include all costs for electric power usage for the Portsmouth Conversion Site.</p>		

**Work Breakdown Structure**

**1.02.01.04.05**

**Utilities-Other Utilities**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.01.04.05	<b>4. WBS Element Title</b>  Plant Utilities – Other Utilities (Potable Water) (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev. 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p>a. <i>Work Statement</i> The Contractor will be responsible for establishing and maintaining efficient use of water throughout the plant site which includes manage and negotiate if needed any change in rate structures and usage by use of specific water subcontracts. Contractor should establish and maintain subcontractors with all utilities as needed and verify that rates are reasonable.</p>		
<p>b. <i>Cost Content</i> This WBS element will summarize that portion of the Portsmouth utility cost that covers portable water usage for the DUF6 conversion site, which includes Conversion Building, Administration Building, miscellaneous structures and the Cylinder Yard Operations.</p>		
<p>c. <i>Technical Content</i> The following technical content elements include all costs for water usage the Portsmouth Conversion Site. This includes all potable water.</p>		

**Work Breakdown Structure**

**1.02.02**

**Cylinder, Product, & Waste Management**



**Work Breakdown Structure**

**1.02.02.01**

**Cylinder Management & Support**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.02.01	<b>4. WBS Element Title</b>  Cylinder Management & Support (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Engineering: <ul style="list-style-type: none"> <li>- Provide rigging and handling support</li> <li>- Provide cylinder inspection support</li> </ul> </li> <li>○ Procurement: <ul style="list-style-type: none"> <li>- Establish subcontracts of cylinder S &amp; M support as needed.</li> </ul> </li> <li>○ Operations: <ul style="list-style-type: none"> <li>- Cylinder surveillance and maintenance at the site</li> <li>- Inspection and stage cylinders for conversion operations</li> <li>- Transport cylinders to conversion facility</li> <li>- Assist in the cylinder staging and movement of conveyances as needed (including rail operations)</li> <li>- Data input to the Cylinder Information Database (CID), NMC&amp;A, waste and product databases</li> <li>- Staff for 8 hours/5 day per week operation</li> </ul> </li> </ul>		
<p><i>b Cost Content</i></p> <p>The following cost elements will be charged to the WBS element:</p> <ul style="list-style-type: none"> <li>○ Labor</li> <li>○ Subcontract Effort</li> <li>○ Supplies</li> <li>○ Materials</li> <li>○ Equipment</li> </ul>		
<p><i>c Technical Content</i></p> <p>Includes all procurement and support effort required for Cylinder Surveillance and Maintenance (S&amp;M). The following are included in this WBS element:</p> <ul style="list-style-type: none"> <li>○ Cylinder Yard Transition</li> <li>○ Cylinder surveillance and maintenance in accordance with the approved Cylinder Surveillance &amp; Maintenance Plan</li> <li>○ Cylinder staging and handling for conversion operations</li> </ul>		

**Work Breakdown Structure**

**1.02.02.01.01**

**Cylinder Yard**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.02.01.01	<b>4. WBS Element Title</b>  Cylinder Yard (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Engineering: <ul style="list-style-type: none"> <li>- Provide rigging and handling support</li> <li>- Provide cylinder inspection support</li> </ul> </li> <li>○ Procurement: <ul style="list-style-type: none"> <li>- Establish subcontracts of cylinder S &amp; M support as needed.</li> </ul> </li> <li>○ Operations: <ul style="list-style-type: none"> <li>- Cylinder surveillance and maintenance at the site</li> <li>- Inspection and stage cylinders for conversion operations</li> <li>- Transport cylinders to conversion facility full cylinder staging yard</li> <li>- Assist in the cylinder staging and movement of conveyances as needed</li> <li>- Data input to the Cylinder Information Database (CID), NMC&amp;A, waste and product databases</li> <li>- Staff for 8 hours/5 day per week operation</li> </ul> </li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements will be charged to the WBS element:</p> <ul style="list-style-type: none"> <li>○ Labor</li> <li>○ Subcontract Effort</li> <li>○ Supplies</li> <li>○ Materials</li> <li>○ Equipment</li> </ul>		
<p><i>c. Technical Content</i></p> <p>Includes all procurement and support effort required for Cylinder Surveillance and Maintenance (S&amp;M). The following are included in this WBS element:</p> <ul style="list-style-type: none"> <li>○ Cylinder Yard Transition</li> <li>○ Cylinder surveillance and maintenance in accordance with the approved Cylinder Surveillance &amp; Maintenance Plan</li> <li>○ Cylinder staging and handling for conversion operations</li> </ul>		

**Work Breakdown Structure**

**1.02.02.01.02**

**Cylinder Material & Disposition Support**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.02.02.01.02	<b>4. WBS Element Title</b>  Cylinder Material & Disposition Support (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Engineering <ul style="list-style-type: none"> <li>- Provide rigging and handling support</li> <li>- Provide cylinder inspection support</li> </ul> </li> <li>○ Procurement <ul style="list-style-type: none"> <li>- Establish subcontracts as needed for cylinder handling and transportation</li> </ul> </li> <li>○ Operations <ul style="list-style-type: none"> <li>- HF operations</li> <li>- Transport cylinders to conversion operations from full cylinder staging yard</li> <li>- Transport cylinders during conversion operation activities</li> <li>- Rail car positioning for transportation of HF acid and oxide</li> <li>- Operation of effluent treatment system, demineralized water system &amp; KOH regeneration</li> <li>- System in the KOH Building</li> <li>- Staff for 8 hours/5 day per week operation</li> </ul> </li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements will be charged to the WBS element:</p> <ul style="list-style-type: none"> <li>○ Labor</li> <li>○ Subcontract Effort</li> <li>○ Supplies</li> <li>○ Materials</li> <li>○ Equipment</li> </ul>		
<p><i>c. Technical Content</i></p> <p>Includes all procurement and support effort required for HF handling, and cylinder handling related to conversion operations and transportation. The following are included in this WBS element:</p> <ul style="list-style-type: none"> <li>○ HF handling</li> <li>○ Cylinder staging and handling for conversion operations</li> <li>○ Cylinder staging and handling for transportation offsite</li> <li>○ Operations in the KOH Building</li> </ul>		

**Work Breakdown Structure**

**Work Breakdown Structure**

**1.02.02.02**

**Waste Management & Transport**



**Work Breakdown Structure**

**1.02.02.02.01**

**Waste Transportation**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF <sub>6</sub> Conversion Project		<b>2. Date Initiated</b>  3/09/09
<b>3. WBS Element</b>  1.02.02.02.01	<b>4. WBS Element Title</b>  Waste Transportation (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS covers transportation costs relative to waste shipments including Uranium oxide (packaged in recycled UF<sub>6</sub> cylinders), empty cylinders (not meeting DOT packaging requirements) and all secondary waste (packaged in drums or boxes) generated during conversion and cylinder yard operations.</p>		
<p><i>b. Cost Elements</i></p> <ul style="list-style-type: none"> <li>○ Labor</li> <li>○ Subcontractor Effort</li> <li>○ Transportation Fees</li> <li>○ Transload Costs</li> <li>○ Rail maintenance costs</li> </ul>		
<p><i>d. Technical Approach/Assumptions</i> The following elements are included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Rail transportation from conversion sites to disposal facility or transload facility</li> <li>○ Transload operations and truck shipments for disposal (as needed)</li> <li>○ Transportation fees</li> <li>○ Transload costs</li> <li>○ ODC that including equipment, material, subcontracts, travel/relocation</li> <li>○ Rail Maintenance including railcars and rail track</li> </ul>		
<p><i>c. Deliverables</i></p> <ul style="list-style-type: none"> <li>○ Transportation services Contract/Tender</li> <li>○ Transload services Contract</li> <li>○ Prepare and maintain Transportation Program</li> <li>○ Prepare and maintain Transportation procedures</li> <li>○ Rail Maintenance plans and procedures (including schedule for maintenance)</li> </ul>		

**Work Breakdown Structure**

**1.02.02.02.02**

**Waste Disposal**

## Work Breakdown Structure

### WORK BREAKDOWN STRUCTURE DICTIONARY ELEMENT DEFINITION

<b>1. Project Title/Participant</b> DUF6 Conversion Project		<b>2. Date Initiated</b> 3/09/09
<b>3. WBS Element</b> 1.02.02.02.02	<b>4. WBS Element Title</b> Waste Disposal (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b> Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b> None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS element is for costs associated with disposal of primary waste streams, uranium oxide and empty cylinders only. All other secondary waste streams are captured under WBS element 1.02.02.02.04.</p>		
<p><i>b. Technical Approach/Assumptions</i> Establish a disposal path for primary waste streams, uranium oxide and empty cylinders.</p>		
<p><i>c. Cost Elements</i></p> <ul style="list-style-type: none"> <li>○ Disposal costs</li> <li>○ Subcontract Labor</li> <li>○ No labor costs are included in this WBS</li> </ul>		
<p><i>d. Deliverables</i></p> <ul style="list-style-type: none"> <li>○ Establish waste treatment and or disposal contracts at commercial treatment storage and disposal facilities.</li> <li>○ Establish waste certification program.</li> <li>○ Track and report disposal volumes and costs.</li> <li>○ Obtain certificates of disposal.</li> </ul>		

**Work Breakdown Structure**

**1.02.02.02.03**

**Waste Sampling and Characterization**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/09/09
<b>3. WBS Element</b>  1.02.02.02.03	<b>4. WBS Element Title</b>  Waste Sampling and Characterization (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> This WBS element is for costs associated with sampling and analysis necessary to perform characterization for waste disposal.		
<i>b. Technical Approach/Assumptions</i> Establish sampling and analysis necessary to perform characterization for waste disposal.		
<i>c. Cost Elements</i> <ul style="list-style-type: none"><li>○ Analytical costs</li><li>○ Subcontract Labor</li><li>○ Labor costs are not included in this WBS.</li></ul>		
<i>d. Deliverables</i> <ul style="list-style-type: none"><li>○ Prepare Sampling and Analysis procedures</li><li>○ Prepare Sampling and Analysis Plans</li><li>○ Develop database to track and record sampling and analysis, and characterization</li></ul>		

**Work Breakdown Structure**

**1.02.02.02.04**

**Secondary Waste Preparation**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/09/09
<b>3. WBS Element</b>  1.02.02.02.04	<b>4. WBS Element Title</b>  Secondary Waste Preparation (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS element is for costs associated with treatment (as necessary) and disposal of secondary wastes generated from site activities. This WBS element does not include oxide, empty cylinders or HF.</p>		
<p><i>b. Technical Approach/Assumptions</i> Establish a disposal path for LLRW/Mixed waste. Hazardous waste (non-radioactive), industrial waste, and recycling.</p>		
<p><i>c. Cost Elements</i></p> <ul style="list-style-type: none"> <li>○ Subcontract Labor</li> <li>○ Material costs</li> </ul>		
<p><i>d. Deliverables</i></p> <ul style="list-style-type: none"> <li>○ Establish Task Orders/BOAs/contracts with treatment and disposal facilities to ensure disposition of all secondary generated wastes.</li> <li>○ Develop and implement a Waste Minimization Pollution Prevention Program</li> </ul>		



**Work Breakdown Structure**

**1.02.02.03**

**Product Sales**

**Work Breakdown Structure**

**1.02.02.03.01**

**AqHF Sales**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/5/09
<b>3. WBS Element</b>  1.02.02.03.01	<b>4. WBS Element Title</b>  AqHF Sales (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> This WBS element is for the sale of AqHF.		
<i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers AqHF sales during Operations: <ul style="list-style-type: none"> <li>○ Labor (plus fringe, including regular and rotating shift, by union and non-union) to prepare and load the material in trucks or train cars, accounted for elsewhere</li> <li>○ ODC that including equipment, material, subcontracts, travel/relocation</li> <li>○ Income from sales to Sovay pursuant to UDS/Solvay contract dated May 1, 2006</li> </ul>		
<i>c. Technical Content</i> Volumes and prices as presented in RFP and UDS/Solvay contract.		

**Work Breakdown Structure**

**1.02.02.03.02**

**Other Product Sales**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  10/06/08
<b>3. WBS Element</b>  1.02.02.03.02	<b>4. WBS Element Title</b>  Other Product Sales (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>g. Work Statement</i> This WBS element is for the sale of other product including: DUF6 and material resulting from the conversion process (CaF2 and uranium oxide). Note: This WBS does not include the sale of AqHF.</p>		
<p><i>h. Cost Content</i> The following cost elements are to be included in this WBS element that covers HF sales during Operations:</p> <ul style="list-style-type: none"> <li>○ Labor (plus fringe, including regular and rotating shift, by union and non-union) to prepare and load the material in trucks or train cars, accounted for elsewhere</li> <li>○ ODC that including equipment, material, subcontracts, travel/relocation</li> <li>○ Income from sales</li> </ul>		
<p><i>i. Technical Content</i> Volumes and prices as presented in RFP.</p>		

**Work Breakdown Structure**

**1.02.03**

**Site Support**

**Work Breakdown Structure**

**1.02.03.01**

**Site ES&H**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/03/09	
<b>3. WBS Element</b>  1.02.03.01	<b>4. WBS Element Title</b>  Site ES&H (Portsmouth)		
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>	
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>		
<b>10. Element Task Description</b>			
<p><i>a. Work Statement</i> This WBS element is for ES&amp;H Services to implement and maintain environmental, safety, and health programs (including radiation control (RADCON)). This WBS element consists of the following tasks:</p> <ul style="list-style-type: none"> <li>○ Integrated Safety Management System (ISMS) implementation assistance</li> <li>○ Regulatory Interface for environmental and safety issues</li> <li>○ Site assessments</li> <li>○ Plan &amp; procedure development</li> <li>○ ES&amp;H reporting/trending</li> <li>○ Hazard analysis and mitigation assistance</li> <li>○ Dosimetry and bioassay services</li> <li>○ Occupational medicine</li> <li>○ Respirator Services</li> <li>○ Safety incentive program</li> </ul>			
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ ODC that includes travel, equipment, materials and subcontracts required to maintain ES&amp;H services</li> </ul>			
<p><i>c. Technical Content</i> Provide professional Environment, Safety and Health services to ensure safe, compliant plant operations. Specific content includes:</p> <ul style="list-style-type: none"> <li>○ Maintain compliant ES&amp;H programs</li> <li>○ Perform ES&amp;H assessments, serving as subject matter experts in related fields</li> <li>○ Develop and implement ES&amp;H plans and procedures</li> <li>○ Maintain required documentation</li> <li>○ Maintain external and internal dosimetry programs</li> <li>○ Provide occupational medicine services (subcontract)</li> <li>○ Provide respirator services directly or by subcontract</li> <li>○ Maintain ES&amp;H related instrumentation</li> </ul>			



**Work Breakdown Structure**

**1.02.03.02**

**Safeguards, Security & Emergency Preparedness**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/03/09
<b>3. WBS Element</b>  1.02.03.02	<b>4. WBS Element Title</b>  Safeguards, Security & Emergency Preparedness (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The SS&amp;EP WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Maintain plant security systems, policies, and procedures</li> <li>○ Maintain plant NMCA plans, policies, and procedures</li> <li>○ Procure NMCA services from landlord to support plant</li> <li>○ Coordinate external security requirements</li> <li>○ Report incidents of security concern</li> <li>○ Provide security training as required</li> <li>○ Coordinate emergency management exercises</li> <li>○ Maintain emergency plans and procedures</li> <li>○ Coordinate/provide emergency management training</li> </ul>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ ODC that includes travel, materials and subcontractor support required to maintain Safeguard Security and Emergency Preparedness services</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Establish and maintain security at the plant site in accordance with DOE and site landlord requirements</li> <li>○ Implement safeguards for nuclear materials (NMCA)</li> <li>○ Maintain plant emergency preparedness plans and procedures.</li> </ul>		

**Work Breakdown Structure**

**1.02.03.03**

**Compliance**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/03/09
<b>3. WBS Element</b>  1.02.03.03	<b>4. WBS Element Title</b>  Compliance (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i>  The Compliance WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Review incidents and adverse conditions for reportability (ORPS and PAAA)</li> <li>○ Perform assessments</li> <li>○ Review implementation of regulatory requirements</li> <li>○ Maintain required documentation</li> </ul>		
<p><i>b. Cost Content</i>  The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ ODC for procurement/development and maintenance of ORPS and PAAA reporting system (software).</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Manage regulatory compliance activities for the plant.</li> <li>○ Manage ORPS assessments and reporting</li> <li>○ Manage PAAA assessments and reporting and implementation reviews.</li> </ul>		

**Work Breakdown Structure**

**1.02.03.04**

**Quality Assurance & Quality  
Control**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/03/09
<b>3. WBS Element</b>  1.02.03.04	<b>4. WBS Element Title</b>  Quality Assurance & Quality Control (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The SS&amp;EP WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Coordinate QA &amp; QC support &amp; assessments of the procurement process from preparation of requisitions through acceptance of product &amp; documentation.</li> <li>○ Provide QA &amp; QC assessments for material; equipment; and/or services.</li> </ul>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Travel</li> </ul>		
<p><i>c. Technical Content</i> QA &amp; QC support &amp; assessments of material; equipment &amp; services providers.</p>		

**Work Breakdown Structure**

**1.02.03.05**

**Plant Engineering**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/03/09
<b>3. WBS Element</b>  1.02.03.05	<b>4. WBS Element Title</b>  Plant Engineering (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><b>a. Work Statement</b>  The Plant Engineering WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Assist in the development of operations and maintenance procedures</li> <li>○ Support the maintenance organization in the preparation of work packages</li> <li>○ Perform required analyses for systems and equipment maintenance</li> <li>○ Schedule surveillances in conjunction with maintenance</li> <li>○ Maintain configuration control and management</li> <li>○ Develop and maintain engineering plans and procedures</li> <li>○ Engineering support to the facility in the following specialties: <ul style="list-style-type: none"> <li>- Process</li> <li>- Electrical</li> <li>- Mechanical</li> <li>- I&amp;C</li> <li>- Facility</li> </ul> </li> </ul>		
<p><b>b Cost Content</b>  The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ ODC that includes travel, equipment, parent company and subcontractor support.</li> </ul>		
<p><b>c Technical Content</b>  Plant Engineering support services</p>		



**Work Breakdown Structure**

**1.02.03.06**

**Business Systems**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.03.06	<b>4. WBS Element Title</b>  Business Systems (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> The Business Systems WBS element consists of the following major tasks:</p> <ul style="list-style-type: none"> <li>○ Provide procurement services to plant organizations for materials and supplies</li> <li>○ Maintain plant project controls system summarizing and reporting plant performance/progress</li> <li>○ Provide Cost Accounting support to the plant including processing of invoices &amp; data entry into cost accounting systems</li> <li>○ Maintain plant records and documents, enter records and documents into management systems</li> </ul>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Travel</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Procure plant supplies (Procurement system)</li> <li>○ Measure and report plant/program performance (Project controls system)</li> <li>○ Manage plant cost accounting system</li> <li>○ Maintain records and documentation system</li> </ul>		

**Work Breakdown Structure**

**1.02.03.07**

**Human Resources/ Industrial Relations**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/9/09
<b>3. WBS Element</b>  1.02.03.07	<b>4. WBS Element Title</b>  Human Resources and Industrial Relations (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS element is for Human Resources (HR) and Labor Relations (LR) located at the plant, reporting to Plant Manager and dotted line to Corporate.</p> <p>HR addresses human resources including hiring, processing in, new employee orientation, benefits and pay issues, performance issues and performance appraisals, working with management.</p> <p>LR addresses primarily union related tasks, including contracts and bargaining unit topics for hourly workers.</p>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe, including regular and rotating shift, by union and non-union</li> <li>○ ODC that including equipment, material, subcontracts, travel/relocation</li> </ul>		

**Work Breakdown Structure**

**1.02.03.08**

**Training**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/9/09
<b>3. WBS Element</b>  1.02.03.08	<b>4. WBS Element Title</b>  Training (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS element is for required Training at the plant.</p>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe, including regular and rotating shift, by union and non-union</li> <li>○ ODC that including equipment, material, subcontracts, travel/relocation</li> <li>○ Assume labor costs of those being trained are under the “home” WBS for those being trained</li> <li>○ Assumes those on board on day 1 have received all training necessary but will have recurring or compliance training as appropriate</li> <li>○ New hires will receive substantial training in startup + recurring or compliance training thereafter.</li> <li>○ Training is for costs of actual training, in-house or subcontract</li> </ul>		

**Work Breakdown Structure**

**1.02.03.09**

**Information Technology**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Project		<b>2. Date Initiated</b>  3/9/09
<b>3. WBS Element</b>  1.02.03.09	<b>4. WBS Element Title</b>  Information Technology (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i> This WBS element is for required Information Technology at the plant. It does not include any corporate activities. Activities include direct support of all plant personnel and systems. This includes PC and software support. While the personnel support the plant, a significant amount of support is also provided by corporate to both plants.</p>		
<p><i>b. Cost Content</i> The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"><li>○ Labor plus fringe, including regular and rotating shift, by union and non-union</li><li>○ ODC that including equipment, material, subcontracts, travel/relocation</li></ul>		



**Work Breakdown Structure**

**1.02.04**

**Plant Management**

**Work Breakdown Structure**  
**WORK BREAKDOWN STRUCTURE DICTIONARY**  
**ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.04	<b>4. WBS Element Title</b>  Plant Management (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<i>a. Work Statement</i> Provide site-wide management and subcontract administration functions.		
<i>b. Cost Content</i> This WBS element summarizes costs associated with WBS elements for Portsmouth plant management, conversion operations, and logistics/cylinder management during Transition, Start-up and Operations and will include labor, fringe, material, subcontracts, and travel.		
<i>c. Technical Content</i> <ul style="list-style-type: none"><li>○ Plant Management</li><li>○ Oversight of Conversion Operations, Cylinder/Product/Waste Management, and Site Support functions which will be described in detail in other WBS elements.</li></ul>		

**Work Breakdown Structure**

**1.02.04.01**

**Plant Manager**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09	
<b>3. WBS Element</b>  1.02.04.01	<b>4. WBS Element Title</b>  Plant Manager (Portsmouth)		
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>	
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>		
<b>10. Element Task Description</b>			
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Provide plant management services and common infrastructure support</li> <li>○ Provide site level administrative support</li> <li>○ Site lead on Emerging Issues such as audits, safety reviews, and other unplanned activities.</li> </ul>			
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ Office supplies</li> <li>○ Common safety gear, PPE for site</li> <li>○ Subcontracts for operating contractors laundry and garbage collection</li> <li>○ Travel between sites</li> <li>○ Relocation costs (none included)</li> <li>○ Staff professional development, including travel and professional society dues</li> </ul>			
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Plant Management</li> <li>○ Oversight of Conversion Operations, Cylinder/Product/Waste Management, and Site Support functions which will be described in detail in lower WBS levels</li> <li>○ Maintain subcontracts for site-wide contracts listed in a. above</li> <li>○ Coordinate site responses to Emerging Issues</li> </ul>			

**Work Breakdown Structure**

**1.02.04.02**

**Conversion Operations Manager**

**Work Breakdown Structure  
WORK BREAKDOWN STRUCTURE DICTIONARY  
ELEMENT DEFINITION**

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/06/09
<b>3. WBS Element</b>  1.02.04.02	<b>4. WBS Element Title</b>  Conversion Operations Manager (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Provide management of conversion operations</li> <li>○ Provide administrative support for conversion operations</li> <li>○ Develop and maintain operating and maintenance procedures</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ This is a labor only WBS element</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Conversion operations management and administrative support</li> <li>○ Oversight of DUF6 Conversion Operations functions during transition, startup and full operations will be described in detail in other WBS levels</li> <li>○ Oversight of plant Maintenance functions during transition, startup and full operations which will be described in detail in other WBS levels</li> <li>○ Implement utility subcontracts</li> <li>○ Manage N2 Lease contract</li> </ul>		

**Work Breakdown Structure**

**1.02.04.03**

**Logistics Manager**

## Work Breakdown Structure

### WORK BREAKDOWN STRUCTURE DICTIONARY ELEMENT DEFINITION

<b>1. Project Title/Participant</b> DUF6 Conversion Operations		<b>2. Date Initiated</b> 03/06/09
<b>3. WBS Element</b> 1.02.04.03	<b>4. WBS Element Title</b> Logistics Manager (Portsmouth)	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b> Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b> None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <ul style="list-style-type: none"> <li>○ Provide management of logistics/cylinder operations</li> <li>○ Provide administrative support for logistics/cylinder operations</li> <li>○ Develop and maintain operating and maintenance procedures for logistics/cylinder operations</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements are to be included in this WBS element that covers Transition, Start-up, and Operations:</p> <ul style="list-style-type: none"> <li>○ Labor plus fringe</li> <li>○ This is a labor only WBS element</li> </ul>		
<p><i>c. Technical Content</i></p> <ul style="list-style-type: none"> <li>○ Logistics/cylinder operations management and administrative support</li> <li>○ Oversight of logistics/cylinder operations functions during transition, startup and full operations</li> </ul>		



**Work Breakdown Structure**

**1.03**

**Integrated Program Management & Support**

**Work Breakdown Structure**

**1.03.01**

**Program Management & Administration**

## Work Breakdown Structure

### WORK BREAKDOWN STRUCTURE DICTIONARY ELEMENT DEFINITION

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.03.01 Contractor Management	<b>4. WBS Element Title</b>  Program Management & Administration	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i>  Management/Administration:  <ul style="list-style-type: none"> <li>- Provide lead company management activities</li> <li>- Provide lead procurement activities</li> <li>- Provide lead financial services</li> <li>- Provide lead human resources activities</li> <li>- Provide lead project controls activities</li> <li>- Provide lead information technology</li> <li>- Provide administrative support activities</li> <li>- Provide lead on emerging issues (E.g. audits, safety reviews, unplanned activities)</li> </ul> Procurement:  <ul style="list-style-type: none"> <li>- Provide support and coordination for all procurement activities</li> </ul> Operations:  <ul style="list-style-type: none"> <li>- Provide support and coordinate for all areas of operational activity</li> </ul> </p>		
<p><i>b. Cost Content</i>  The following cost elements will be charged to the WBS element:  <ul style="list-style-type: none"> <li>- Labor</li> </ul> </p>		
<p><i>c. Technical Content</i>  Includes all labor effort required for Program Management and Administration. The following are included in this WBS element:  <ul style="list-style-type: none"> <li>- Company President</li> <li>- Chief Operating Officer <ul style="list-style-type: none"> <li>- Deputy Manager</li> <li>- Human Resources Management</li> <li>- Project Controls Management</li> <li>- Document Management</li> <li>- Information Technology Management</li> <li>- Procurement Management</li> <li>- Finance Management</li> <li>- Administrative Staff</li> </ul> </li> </ul> </p>		

**Work Breakdown Structure**

**1.03.02**

**Operations Management**

## Work Breakdown Structure

### WORK BREAKDOWN STRUCTURE DICTIONARY ELEMENT DEFINITION

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09								
<b>3. WBS Element</b>  1.03.02 Contractor Management	<b>4. WBS Element Title</b>  Operations Management									
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>								
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>									
<b>10. Element Task Description</b>										
<p><i>a. Work Statement</i></p> <p>Engineering/Management</p> <ul style="list-style-type: none"> <li>- Provide lead operations &amp; maintenance management activities</li> <li>- Provide lead facilities engineering management activities</li> <li>- Provide lead waste &amp; product disposition management activities</li> <li>- Provide lead QA and corporate procedures management activities</li> <li>- Provide lead corporate training management activities</li> <li>- Provide lead nuclear safety management activities</li> <li>- Provide lead ES&amp;H/S/S management activities</li> </ul> <p>Procurement:</p> <ul style="list-style-type: none"> <li>- Provide support and coordination for all procurement activities</li> </ul> <p>Operations:</p> <ul style="list-style-type: none"> <li>- Provide oversight and management for all operational activities</li> </ul>										
<p><i>b. Cost Content</i></p> <p>The following cost elements will be charged to the WBS element:</p> <ul style="list-style-type: none"> <li>- Labor</li> </ul>										
<p><i>c. Technical Content</i></p> <p>Includes all labor effort required for Operations Management. The following are included in this WBS element at each site:</p> <table border="0"> <tr> <td>- Operations &amp; Maintenance Manager</td> <td>- Corporate Training Manager</td> </tr> <tr> <td>- Facilities Engineering Manager</td> <td>- Nuclear Safety Management</td> </tr> <tr> <td>- Waste &amp; Product Disposition Manager</td> <td>- ES&amp;H/S/S Management</td> </tr> <tr> <td>- QA and Corporate Procedures Manager</td> <td></td> </tr> </table>			- Operations & Maintenance Manager	- Corporate Training Manager	- Facilities Engineering Manager	- Nuclear Safety Management	- Waste & Product Disposition Manager	- ES&H/S/S Management	- QA and Corporate Procedures Manager	
- Operations & Maintenance Manager	- Corporate Training Manager									
- Facilities Engineering Manager	- Nuclear Safety Management									
- Waste & Product Disposition Manager	- ES&H/S/S Management									
- QA and Corporate Procedures Manager										

**Work Breakdown Structure**

**1.03.03**

**Other Direct Costs**

## Work Breakdown Structure

### WORK BREAKDOWN STRUCTURE DICTIONARY ELEMENT DEFINITION

<b>1. Project Title/Participant</b>  DUF6 Conversion Operations		<b>2. Date Initiated</b>  03/04/09
<b>3. WBS Element</b>  1.03.03 Contractor Management	<b>4. WBS Element Title</b>  Other Direct Costs	
<b>5. Index Line No.</b>	<b>6. Revision No. &amp; Authorization</b>  Rev 0	<b>7. Date of Revision</b>
<b>8. Approved Changes (BCP No.)</b>  None	<b>9. Budget &amp; Reporting No.</b>	
<b>10. Element Task Description</b>		
<p><i>a. Work Statement</i></p> <p>Engineering</p> <ul style="list-style-type: none"> <li>- N/A</li> </ul> <p>Procurement:</p> <ul style="list-style-type: none"> <li>- Procurement for office space</li> <li>- Procurement for office equipment and material</li> <li>- Establishment of subcontracts for home office support activities (IT, legal, specialty HR, payroll, etc.) as required</li> </ul> <p>Operations:</p> <ul style="list-style-type: none"> <li>- N/A</li> </ul>		
<p><i>b. Cost Content</i></p> <p>The following cost elements will be charged to the WBS element:</p> <ul style="list-style-type: none"> <li>- Office Space</li> <li>- Subcontract Effort</li> <li>- Supplies</li> <li>- Materials</li> <li>- Equipment</li> </ul>		
<p><i>c. Technical Content</i></p> <p>Includes all office support items required to support Program Management and Administration, and Operations Management. The following are included in this WBS element:</p> <ul style="list-style-type: none"> <li>- Office space for home office staff.</li> <li>- All office supplies and equipment including IT equipment.</li> <li>- Subcontract support as required for home office activities.</li> <li>- Travel as required by home office staff to support project activities.</li> </ul>		

**Work Breakdown Structure**

**End of WBS**